



RP-HPLC Method for the Determination of Malathion in Pesticide Formulation

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Malathion is one of the most commonly used organophosphorus insecticides both in our country and world-wide. Its use is also approved in the countries of the European Union¹. It is an active substance of the pesticide formulations.

The development of new analytical methods for the determination of active substances in plant protection products is of great importance and need for the control of their quality.

This study presents a simple, precise and accurate reversed-phase high-performance liquid chromatography (RP-HPLC) method for the determination of malathion in the pesticide formulation “Etiol tečni” in form of emulsion concentrate. The analysis was performed on a C-8 stationary phase using isocratic elution with mobile phase composed of acetonitrile and water, flow rate of 1 mL/min, constant column temperature at 25°C and ultraviolet-diode array detection (UV-DAD) at 220 nm. The specificity, selectivity, linearity, precision, accuracy, limit of detection (LOD) and quantification (LOQ) were tested for the method validation according to the CIPAC (Collaborative International Pesticides Analytical Council) guidelines. The calculated values for the recovery ranged from 100.68 to 102.00 %, while the relative standard deviation (RSD) from 0.15 to 1.36 %. The obtained results showed that the proposed method can be used for routine analysis of the active substance malathion in the pesticide formulation “Etiol tečni” following the CIPAC rules.

Keywords: malathion, plant protection product, RP-HPLC method.

References

1. Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC.